

COOP'S TECHNOLOGY DIGEST

-A Timely Report On The World Of Communications-

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REACHING CTD: Telephone (64) (0)9-406-0651; 24 HOUR FAX (64) (0)9-406-1083

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ROBERT B. COOPER, P.O. BOX 330, MANGONUI, FAR NORTH (NEW ZEALAND)

NOW - OUR FIFTH YEAR OF SERVICE

COOP'S TECHNOLOGY DIGEST

November 5, 1997 ♦ VOLUME 97-9-42

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The Internet Situation Grows More Precarious


CTD's look at an attempt by New Zealand group Advanced Communication Technologies of New Zealand, Limited (ACTONZ) through the past two reports has been paralleled in our SatFACTS Monthly by a similar series of reports concerning the German based MediaNet operation. MediaNet, it turns out, has sold a "franchise" to a group of Australians for something approximating US\$300,000. What the Australians got for their money has been the subject of our SatFACTS Monthly reports and it now appears they received some undefined "rights" to distribute one-way Internet services via a television station's Vertical Blanking Interval (VBI). After the fact, it would seem the Australians paid far too much for "rights" to a system which perhaps the Germans did not actually own in the first place. The Australian funds reportedly originated from within the often controversial Len Ainsworth family. The Ainsworths (patriarch father Len, seven sons) control the firm Aristocrat Leisure and this company is the second largest manufacturer of slot gambling machines in the world. Aristocrat is currently in difficulties with American gaming commissions and has a history of similar problems with Australian legal authorities. One son, Kjerulf Ainsworth, is identified as the backer behind the Australian group Net On Air Australia Pty Ltd. by principals of Net On Air.

Through all of this intrigue, Australian Eric Fien and his firm Broadnet International Pty Ltd has stood out as the one breath of technical competence in a field largely populated by entrepreneurs with virtually no real understanding of the complexities of distributing Internet. Fien was identified by CTD in our August and October reports for his roll in trying to jump start New Zealand firm ACTONZ into the Internet distribution business. To our reports, Eric Fien now addresses the following comments.

"I have followed with considerable interest your articles concerning the seemingly endless saga of Net On Air (MediaNet) and its various formats. As CTD and SatFACTS have properly pointed out, MediaNet is essentially a one-way form of delivering 'filtered data' to interested (or not so interested) customers. This can possibly be enhanced by expanding upon the MediaNet technical parameters to provide a 'back channel' utilising a conventional telco line but as we know and understand MediaNet, they never attempted to enhance their system in this way. And as you reported in SatFACTS for September, it is essential for MediaNet that the system have access to the V.B.I space of a national broadcaster if they are to succeed.

For our part, we have pursued the alternate proposition of using a back channel for the request, except in a commercial situation (large business users) where the cost of a V-SAT link from the server to the customer (or vice-versa) can be justified. The former was the basis for our joint venture proposal to New Zealand's ACTONZ, while we have pursued the V-SAT approach here in Australia.

It should be noted that although several firms of the MediaNet mentality have made announcements concerning use of the V.B.I. in Australia, there has been very little commercial interest in this approach here. There are two factors at work here and they should be well understood by anyone contemplating distribution of Internet by any 'broadcast means'. First, a major media giant in Australia is actively converting their present television, newspaper and satellite operations into an integrated conglomerate that will provide all of their needs within a single umbrella network. As CTD has been warning for several years, the merger of the various now separate information delivery systems into a common data



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stream is well underway and certainly far closer to reality than most people - even those in the peripheral of the business - realise. The core of this growth is the next level of Internet, one within grasp by the turn of the century if not sooner. What will drive this to fruition will be costs - as video and data become one stream, those who have access to wideband data streams (through holdings of satellite transponder space) will have a tremendous advantage in the data stream delivery business and as data compression techniques improve by leaps and bounds each year, there will be sufficient spare bandwidth capacity in virtually every form of data delivery at costs that will, because of the world-wide networks available, be far below those of any would-be piecemeal competitors. Those who continue to focus upon television as one stream, telephone and machines talking to one another as a separate stream, and one-way data broadcast as a third stream are in for a very rude awakening when they discover all of these can and will be accommodated in a single stream at costs a fraction of present separate delivery techniques.

Our major Australian firm approach is evolving on a weekly basis to maintain currency with the latest developments in data stream processing. Whether they intend to bring the service totally to the individual consumer level (i.e., throughput of any and all streams in a single data bed to any and all users), or will launch as a "super I.S.P." (Internet Service Provider) is yet to be announced. It is my belief that the days of the smaller pseudo-independent I.S.P. operation are on a short string. The writing is clearly on the wall - International networked data access has caught the financial eye of many of the largest players in the world and they in turn have decided there are Mega Dollars out there waiting to be harvested. And I think they are right.

Secondly, the proliferation of Microsoft Network access into business almost as an afterthought by Microsoft (or - indeed - was it a carefully planned strategy?) has encouraged big businesses to use the M.S.N. as their link to broadbanded data rather than using regular Telco access. Whether that is local, national or international is already quite immaterial and it will become even less material by 2000. Business users want their system to work, be efficient, effective and cost effective. That's all it takes to be a success!

All of this has significant impact on the access that small businesses and the individual consumer have to these data sources. In many ways it is strikingly similar to the DVB (digital video broadcast) international television programme source situation. If you (whomever 'you' are) wishes to get into the high speed data stream 'gravity train', then there is a 'big brother' already operating out there just waiting to provide you with that service - at a certain cost and with their own technology (read: access routine) which follows business parameters that effectively locks you as a distributor of information to their system by denying you access to the same quality of service from any other source (read: foreign access routine). Virtually all of today's access providers are playing by the same 'rules' - you buy their network access or you go without access. A paranoid person could become quite frightened by these developments because once married to one of these access providers a divorce is virtually impossible.

Whether there is or will be room, at the end of the day, for other forms of access to the Internet, Extranet, Intranet and the other spin-offs is not at all certain. It will be a very interesting period through the coming five years plus and I predict many wallet crunching surprises as the data saga plays out. I do personally believe the MediaNet and similar schemes will prove to be not even worthy of a footnote in history within just a few short years.

Putting on my 'Broadnet glasses', here is how I see the scene developing near term.

Within ten years, probably far sooner, the only identifiable home device in telephony, television and the data world that will look fairly similar to today will be the telephone instrument. Gone will be present day television - firstly because of migration to digital delivery, and secondly because the transmission of television as we know it will have merged into the overall display system for all media. It will almost certainly be a flat screen TFT device of sizeable proportions on which can be displayed television programmes from virtually any origin spot on earth - at a cost - in both the so-called free to air and pay formats. Also in the same data stream, video on demand - at a cost - plus educational material, data

enhanced by semi-live (real time) video, enhanced news and financial networks and most probably the humble home video from a digital video camera (camcorder).

Gone will be the home computer - replaced by a matrix touch screen, an all-in-one remote control providing access to all of the services through on screen touch menus, one for each class of "service." There will be no need to learn anything about the system or programming. It will be graphical and on screen touch to start, change or stop. No doubt the screen will be divisible into segments to allow multi-services to appear on command. The computer portion will no longer be in the home (or business) but will be part of the intelligence network each terminal is connected with. Even the major storage will be at some point other than in the home or business. I very much doubt you will have any reason to own any software per se; everything you will need will be rented to you for use and provided by the master storage point that serves your locale.

Gone as well will be the already overworked fax machine and other even less exotic data / picture interchange systems. The functions will still be there, but as merely a specific application "envelope" within your integrated communications system package. The major difference from today will be one line access to connectivity to the whole of the system, each seamless and directly accessible by merely touching the appropriate on screen box or display.

As I envision it, the conventional "copper pair" will go, in either one of two ways. Most probably it will be a variation of the present 'last mile technology' where a local hub connects via a broadband fibre link to a regional hub that in turn connects to a broadband satellite network. The satellites will almost certainly be dedicated 'data' satellites, possibly with one huge wideband transponder such that 4 to 6 gigabyte chunks can be seamlessly integrated into a world-wide Ka band network. It is most likely that the satellites will communicate satellite to satellite rather than satellite to ground to satellite where relay links are required. The earth stations will become merely transfer points from the encircling satellite network to the terrestrial (fibre optic) networks. What about individual direct to home (and home to satellite) links? Feasible, yes. Likely, no. The engineering geometry to allow tens of thousands, hundreds of thousands of individual uplink transmitters to pepper a wide bandwidth 'repeater in the sky', the high costs of maintenance for the terminals, the possible health concerns with millions of microwave transmitters on rooftops all suggest that home to satellite will not be a commercial solution. Doubtless it will have a brief moment in history, and will then be replaced with local and regional fibre optic hubs in all but the most remote of locations.

To make the last mile technology work, there will be a need for tremendous on ground spectrum bandwidths. Certainly the least expensive and fastest way for the on-ground service provider to get broad bandwidths and high speed data functional is to use radio to hop over the twisted pair copper wires that now constrain data speeds. For a tiny fraction of the cost of replacing the present last-mile twisted copper wires, your local network provider could switch to digital spread spectrum radio transmission to give each home in a "cell" its own broadband data link (in both directions) to the local or regional hub sites. Chances are the hub sites are already connected to fibre optic high data speed lines and in turn the fibre connected hubs are in turn fibre connected to regional hubs. From there to the satellite (and back) is a piece of cake.

The most obvious spectrum space for these last mile hops is in the VHF and UHF region; say 50 to 900 megahertz. That happens to be where broadcast television now operates. And television broadcasters are in the midst of their own change from analogue to digital transmission technology. In the United States, television transmitters in the 50-175 MHz region are being abandoned and the frequency space cleared for reassignment to other (read "last mile") technologies. Similar moves are planned in Europe, Japan. In a country the size of New Zealand or Australia, if television were to abandon just the band segment below 100 MHz, there would be ample spectrum space for the network providers to create cell technology "last mile" links to totally reinvent the telephone service links as we now know them. Similarly, a chunk of UHF (television) spectrum space equivalent to 12 TV broadcast channels would accomplish the same benefits. Once the last mile wires are replaced with radio links, all of the

bottlenecks now stopping the telephone companies from integrating their fibre optic data capacity with individual customer sites (whether home or business) will evaporate.

Pie in the sky? You might at first believe so, but it is by far the most likely development and given the scale of what needs to be done to integrate all of the various separate parts into a 'whole system' for the future, something very much like this must happen. Best of all, there is no new technology here - we are already doing all of these things as stand alone and often competing systems. Only the putting together is waiting in the wings.

Of all of the challenges facing this natural evolution of telecommunications, relocating the local (and national) TV services to satellite and / or fibre optic delivery is the most sensitive. It comes down to national will and a recognition by the telecommunication authorities in each country that they cannot ignore this issue. For many decades governments in our region have attempted to isolate their populations through control of broadcasting enterprises and limiting (or making illegal) the importation of foreign programming sources. The global nature of information sourcing, the merging of data and video, and the greatly improved ability to 'go anywhere' electronically on request must eliminate these barriers for all time. It will simply no longer be possible to limit access to material originating outside of national boundaries.

At the end of the day, as soon as ten years hence, the future of satellite television as we now know it will be significantly different than today's services. As for future business opportunities, about which CTD is most clearly focused, I believe at the small to medium business levels 'the last mile' will offer significant rewards. Local hubs and last mile connections should not automatically be 'awarded' to the existing telcos (although certainly their view of this will not agree). The opportunity I forecast here will marry today's limited ISP operator with last mile transmission technology as a local business concentrating on interconnecting clients with the vast array of information, entertainment and communication (yes - even the equivalent of today's telephone) that a true global network will offer. If you think the last ten years have been innovative, stand back. You haven't seen anything yet! (1)

INTERNET- The Zak Net Way

Buried on a AsiaSat 2 transponder (3940/vertical) and not easily recognised for what it is Kuwait based Zak Net has been experimenting with high speed Internet delivery via satellite for several months. There are many teething problems. First, the coverage of this satellite extends from New Zealand to eastern Europe and includes virtually all of Asia proper. It is difficult to write and implement a business plan if your market is more than half of the world's population. Each market region (country) must have its own presence, in its native language, supported by a local team of specialists. And there are more than 50 countries under the AsiaSat 2 (Zak Net) footprint.

Then there are the teething problems with the software and hardware. None of this has been done in a major, consumer level, way previously. Their approach - a sound one - is to design and market a PC plug in card which goes into an expansion slot. A satellite antenna (of the proper size, gain, and orientation) plugs into the PC card board provided by ZakNet. Then to run the card, custom software written to implement the ZakNet delivery of Internet to the satellite connected PC.

There are currently approximately 100 cards "on loan" to various test locations in Australia; a much smaller number in New Zealand. The service is password protected and each user has a credit card like piece of plastic which when inserted into the PC card slot provided allows access to the Internet data flow.

ZakNet has established an agent in Australia, none yet in New Zealand (although it is being considered). The service is not presently producing high speed Internet access to New Zealand, reports

1/ Eric Fien, Broadnet International, PO Box 6063 Southg Coast Mail Centre NSW Australia 2521 (tel 61-42-724122; fax 61-42-724033; email cssia@ozemail.com.au)

from Australia are mixed. In the best cases, the system works some of the time very nicely but an unacceptable percentage of the time not so nicely. Costs are unknown but believed to be in the range of A\$1,200 for the PC expansion card (which is in fact an MPEG receiver). User costs are not announced. The important aspect here is that Zak Net is functional, is working out the technical problems, and appears to be both well funded and dead serious about their project. This footnote: They are considering moving off of AsiaSat 2 "sometime in the next 60 to 90 days" and this strongly suggests a move to AsiaSat 3 which will go into operation in that time frame. The effect of that change on New Zealand would all be positive because on AsiaSat 3 ZakNet would be 5 degrees higher (above our western horizon) and thereby gain access to many New Zealand sites now shielded by local terrain.

AND - The New Zealand IHUG Report

CTD reported in issue #97-01-34 (February 1997) a plan by BCL to blanket the metropolitan regions of New Zealand with terrestrial broadcast 12 GHz (microwave) service. BCL's Digital Distribution Network (DDN) was designed to provide delivery to any location within visual line of sight of strategically located digital transmitters with access to a wide variety of Internet and other data streams. And because digital television is "just another data stream" the plan was to offer transmission of video (with companion audio) as well as text and data files to PCs.

Internet provider IHUG has begun tests of just such a service in Auckland utilising a 12 GHz range transmitter (12.366 GHz) and a 3 watt transmitter located near the top of the Sky (Casino) Tower. On the receive end, 30cm size satellite grade dish antennas and standard satellite reception hardware (LNBF, cabling) connect the Sky Tower originated signal to individual PCs through a plug in card. Up to this point the IHUG service is very much like the ZakNet service - the primary difference being that Zak Net transmits from a satellite more than 40,000 kilometres distant while IHUG transmits from a terrestrial antenna typically under 30 kilometres distant.

What the IHUG "StarNet" user gets is higher speed access to Internet through the IHUG satellite feed coming to New Zealand via a PAS-2 Ku band satellite feed which IHUG became a part of several months ago. The user utilises his present telephone modem to communicate requests to the system; IHUG does not presently maintain a data cache on server presence in New Zealand although expansion to this is planned.

The service presently has approximately 100 users on line; the going in cost is NZ\$1059 for the PC card, dish antenna system, cabling and installation by a technician and the software required to access the service. The PC card is similar in design to that provided by ZakNet and the user has an installation menu with (1) a configuration page, (2) individual location address and conditional access data, and, (3) a system performance status page (which provides a reference of the received signal level and the BER - Bit Error Rate). Users will pay either \$79 a month (for totally unlimited Internet access) or \$59 (for limited access).

Those who have done this installation are generally enthusiastic about the performance. A typical telephone line modem Internet access chugs along in the 2 to 3 kilo bit per second range in downloading data to a user's PC. StarNet quite routinely seems to race along at the by comparison high speed of 70 kilobits per second and there are users who have seen it reach 250 kbps. One user tells CTD of downloading a 5 meg file in 3.5 minutes through StarNet.

At this time the StarNet service is only available in the Auckland market. IHUG is believed to be considering several expansion plans including possible satellite delivery (Ku band, PAS-2). Installations to date in the near field proximity of the Sky Tower report one major problem has been too much signal from the relatively minuscule 3 watt transmitter. Installers say they often have to purposefully turn the 30cm antenna off to the side of the direct path towards Sky Tower to attenuate the signal sufficiently that the PC card receiver is not "over driven" by the service level.

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TECHNOLOGY BYTES

...BITS and BYTES you may have missed in the rush to make a dollar ...

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Satellite TV & Radio

Space TV Systems, Taiwan packager of programming for North America, Asia and the Pacific (the latter two through Intelsat 177E, Ku spot beams) may be all but out of business. Taiwan reports relate firm has been taken to court there by terrestrial broadcasters who deny their permission had been granted to allow Space to export their TV programmes outside of the country. The service began in May (see CTD 9705, p. 13), ran free to air for approximately one month and was joined late in June by triple X rated North American adult movie service Exxtasy which lasted only ten days before being removed from digital bouquet. Dishes as small as 75cm reportedly produced DTH level reception along Australia's eastern coast; in New Zealand, 3m plus Ku rated dish was required (not in the DTH class). Taiwan reports further advise the much heralded Acer Technology Group conditional access IRD (receiver) has never been produced in more than sample quantities and contrary to promotions aired by Space, they have no workable CA system in hand. The firm told CTD, in June, it had a "war chest of US\$65 million" and was prepared to "give away free IRDs" to viewers who would subscribe to their service package of 8 Mandarin/Cantonese language channels. Space TV Systems representatives in California deny there are problems, claim they will initiate USA DTH programming bouquet in November (it had been originally scheduled for August). The loser here could be Exxtasy's adult programming package; without a transponder service into the Pacific, it could be dead out here before it launches.

French language pay television service package, planned for distribution via Intelsat 180: Contact and further information from Raymond Wohler, Wohler Communication & Telediffusion, 103 Rue Colette, BP 499 Papeete, Tahiti, French Polynesia (tel ++689-54-40-00, fax ++689-54-40-05 and email rwl9tt50@mail.pf).

French sources continue to report increasing likelihood of reorganisation of French language pay TV package, available world-wide, with not fewer than five programming channels in a digital bouquet. Study now ongoing is looking at conversion of French CFI transponder on Palapa C2 from single programme analogue to multi-channel digital package, of which CFI would be one service included. Downside of proposal - most of Asia is equipped only with analogue reception equipment and if CFI transponder changed to digital, service audience would drop to a fractional percent of present reach while receiver conversions to digital progressed. The French badly wish to be in the bouquet distribution business, but do not want to risk losing established analogue audiences in the process.

Filipino GMA, mostly free top air (except brief scrambled periods daily) in PAL analogue, Palapa C2, is unlikely to remove itself from Palapa when the new Mabuhay (Philippines) satellite goes into operation shortly. GMA's coverage via C2 is a serious reason Filipinos living in Australia (and to a lesser extent, New Zealand) purchase home satellite dishes. The Palapa C2 coverage is important to GMA because of the very large number (million plus) of Filipinos living and working throughout Asia. The channel is widely received from Saudi Arabia east to Japan and provides the only "home town TV coverage" for the ex-pat Filipinos overseas. The new Mabuhay satellite is hoping that the various Filipino broadcast and cable interests "come home" to their own national bird, but the downside is that Mabuhay will have virtually no coverage outside of the Philippines and for some Filipino broadcasters, extra-national coverage is an important feature of satellite service. GMA is locked in a competitive battle with ABS/CBN which was first to establish overseas programming distribution (primarily to the USA).

EMTV's use of analogue (AsiaSat 2, 3765Hz) should end by 30 November. Station has purchased Scientific Atlanta PowerVu MPEG system, is scheduled to appear on 4006VT (1144IF) at Msym 5.632 and FEC 3/4 (note: these numbers may change before actual turn-on; they should be testing the digital service at this time). The 4006 space will be shared with Sky Racing Channel (Australia) which recently moved upward to 4020 in the same transponder. EM TV is owned by 9 Australia, Sky Racing is co-owned by 9 Australia (Packer) and Sky UK (Murdoch).

Australian (Channel) 9 is preparing an Asian region DTH service to be headquartered in and uplinked from Sri Lanka. Target date - first half 1998. Network claims they will spend US\$16m to launch what will grow into a 30

programme channel service with 20 (not specified) "target markets" in south and Southeast Asia. The digital platform is likely to appear on AsiaSat 3 transponders after launch (AsiaSat 3 is scheduled for Russian Proton launch in mid-December with an on-air operational date of mid to late January.)

AsiaSat spokesperson to CTD: *"There will be several big time, major programmer new suppliers on AsiaSat 3. Expect surprises when this satellite goes into operation. We have been prevented from selling DTH transponders on the existing (AsiaSat 1) bird because of our original contract with Murdoch. Those limitations will not carry over to AsiaSat 3."*

Scientific Atlanta status report relating to becoming sole source for HACBSS receivers. Perth telecaster GWN and Alice Springs' Imparja have both now officially announced their plan to utilise PanAmSat PAS-2 Ku beam for distribution of their programming to rural sites in their respective markets. Imparja also admits it is seeking one or more "pay TV programme sources" to distribute as optional extra programming within their bouquet. That Imparja and GWN may end up on the same bouquet remains a possibility. SA's first shipment of consumer level receivers (list price around A\$1,000 but not announced) reportedly was in Sydney in mid-October but because of a mix-up in Canada, the first units are not "DVB compatible" and thus cannot be used with the GWN (+) service(s). SA is telling the market they do not expect a shipment of "DVB compatible" receivers, suitable for use with GWN (Imparja et al) "until early December." Another option - the commercial grade D9223 in the "DVB compatible format" is available through Sydney at US\$1675 per receiver plus air freight of US\$150. GWN had originally announced a November start date for their digital feed, Imparja has been saying "after December." The Sydney office is "awaiting approval from Corporate offices" concerning their August announced plan to establish regional Australian "distributors and service centres" for the new consumer grade of IRDs. At one point in September (CTD 9707, p. 11) SA was looking at creating 8 regional centre service and sales depots for the IRD units. SA has received significant queries from would-be distributors but does not expect a "corporate decision" before early to mid-November. SA contact: Elizabeth Jennison at tel ++61-2-9452-3388.

Gardiner LNBs for Ku band service (using 11.300 GHz local oscillator) have been discontinued and there are no plans to resume the production. Gardiner units have been available in noise figures from 0.6 to 0.9 dB and while their reliability has been often unsatisfactory, when they worked many considered them unbeatable in performance. Low signal level reception (small dishes or simply out of footprint region) on Ku demands high performance LNBs and the next best is a 0.9 dB noise figure product series manufactured in Taiwan (Sciteq at tel 61-8-9306-3738, AV-COMM Pty Ltd at tel 61-2-9949-7417). Gardiner will continue to manufacture LNBF units (low noise block converters with integrated feed horns), not a suitable replacement for stand alone LNBs when non-standard or optimised feeds are required.

HELLO SKY and GALAXY - Are You Listening?

In the exceedingly competitive US DTH (pay TV) market, the name of the sales game is to get IRDs (pay TV digital receivers) into consumer homes. Here is how two of the primary players do this through sales incentives created to encourage retail outlets to aggressively push DTH packages.

1) DBS and Echostar sell IRDs to dealers at US\$230 (DBS) and \$189 (Echostar)

2) Some dealers elect to sell them for less than "cost" because -

a) When each IRD is activated, the dealer is sent \$75 (DBS) or \$100 (Echostar) which effectively lowers the dealer's cost for the unit from \$230 to \$155 (DBS) or \$89 (Echostar);

b) For each IRD sold, dealers are paid \$25 (DBS) or \$56 (Echostar) as an "advertising allowance";

Now the dealer has \$130 (DBS) or \$33 (Echostar) invested in the IRD;

c) For each IRD sold, the dealer is then sent \$25 (DBS) for "market development" which makes the dealer investment now DBS \$105 and Echostar \$33;

d) For each IRD sold with a one year subscription package to programming (it is not mandatory that programming goes with the IRD although the IRD is useless without it and sooner or later the consumer will contact some firm and acquire programming), DBS sends the dealer \$27 in annual commission while Echostar pays \$18 annual commission. Now the DBS retailer has \$78 in actual cost in the IRD while Echostar dealers have \$15

Annual commissions can be collected if the retailer sells the DTH subscriber a renewal for second and ongoing years as well.

All of which explains why Circuit City stores in Atlanta and Detroit have been advertising Thomson DBS receivers at US\$49.99 in recent weeks.

NOTHING "RATIONAL" ABOUT AUSTRALIAN PAY TV RATIONALISATION

It is difficult - nay, impossible - to do justice to the almost daily gyrations now shaking the core of the Australian pay television world. We will attempt to provide a capsule summary of events to our publishing deadline.

- 1) Galaxy is out of money - claims that it will be forced to close the doors in the middle of November unless they are allowed to merge with Foxtel.
 - 2) Optus Vision, child of the Optus telephone family, has gone to government and court to block the merger. Optus claims the merger is about maintaining a level playing field for telephone and that if Foxtel assumes control of Galaxy, Optus - the telephone company - will be denied the opportunity to provide lower cost, universal service to Australian telephone users.
 - 3) Galaxy owns valuable TV programming rights, which it onells to Foxtel and which Foxtel then onells to cable TV subscribers. Foxtel pays too much for those rights, most everyone agrees, and Kerry Packer holds a lien on those rights through Galaxy. If Galaxy was to go out of business, approximately 110,000 Australian homes would be without Galaxy pay TV service and Kerry Packer would then be in control of the rights. Packer and Murdoch have a side agreement that if Galaxy does go under, Packer's rights to those rights will then be transferred to Foxtel anyhow. Still with us?
 - 4) Optus Vision - the cable company - has fewer cable TV subscribers than Foxtel - the cable company. Foxtel and Galaxy, if they were in fact one firm, would control (serve) approximately 70% of the present pay TV subscribers in Australia. Optus Vision would serve the majority of the balance (there are a few, unimportant, independent players as well).
 - 5) The Australian Competition and Consumer Commission has ruled that Galaxy and Foxtel may not merge. A preliminary interlocutory hearing on the ACCC ruling, which prevents the proposed merger from going through, is scheduled for November 24th. That is ten days after Galaxy claims they will be forced to close up shop because they will be out of money.
 - 6) Telstra, as 50% owner of Foxtel, says it cannot be ready for a "full hearing" on the ACCC ruling until "next year" (1998). Therefore if the parties to the merger wait for a "next year" hearing, Galaxy (Australis) will have gone into receivership, and Kerry Packer will have taken over control of the valuable programming rights held by Galaxy. The assumption is that while Galaxy might indeed close down, the programming rights will pass through Packer to Foxtel unimpeded as if Galaxy was still operational.
 - 7) Back in September, Rupert Murdoch met with executive's of Optus's primary shareholder Cable & Wireless and they created a non-binding agreement which was designed to put all of the pay TV firms (Optus Vision, Foxtel, Galaxy) into a common programming pool. The September plan, not yet broken but certainly badly bent, would have allowed Optus Vision and Foxtel to share programming and cable distribution networks and would have allowed Optus Vision programming to be added to the Galaxy satellite and MMDS packages as well.
- Optus - the telephone company - believes that if it is forced to give up (by competition or other pressures) their cable TV entry into homes that their chances of becoming a serious competitor to Telstra - the telephone company - are significantly diminished. Optus -the telephone company- is fighting not so much to prevent Foxtel and Galaxy from merging into a single pay TV operation; rather, they are fighting to preserve their opportunity to be a successful, competitive to Telstra, *telephone* company. Their ability to offer pay TV to homes as a way of getting into homes for their telephone business as well is their primary concern. And in fact, cable television is almost a loss leader to gain access to the telephone business.
- If that was not sufficiently complicated, both Telstra - the telephone company and Optus - the telephone company - are on a public stock flotation course. Neither firm wants to diminish its potential stock value because of present cable TV day to day losses but neither can figure out how to walk away from cable's losses. Galaxy's CEO Sean O'Halloran in September told the press that between Galaxy, Foxtel and Optus Vision, more than A\$2 billion has been "lost" in the first 3 years of the pay TV industry in Australia.

EARLY ADOPTER EXPERIENCE WITH DVD in SOUTH PACIFIC

Although Digital Video Disc(s) are not officially available in the South Pacific, there are those early adopters who will go to any length, trouble and expense to acquire a brand new technology just to be "first." CTD has located several such people in Australia and New Zealand and we share with you some of their candid comments about this latest home video technology.

"I bought a DVD player last week. I have been hearing good reports about DVD, how superior the quality was when compared with LaserDisc, and because of the world regional coding had decided it would be best to buy a Region 1 (North American) player. For one thing, the movies on DVD will be released first (often six months or more "first") on Region 1 format, and for another, Region 1 Players were already available for several sources (none of which, of course, are sanctioned at this point). I really thought I would wait for a player that would be designed to play Region 1 and Australia discs but upon investigation convinced myself it could be a two year wait. Nuts to that! In mid-October I saw a message from someone in the (Web site) alt.video.dvd newsgroup asking about multi region players. The reply was from someone in Melbourne claiming he knew where they were available. I left this person an email message and was referred to a web page of a firm in Melbourne already selling them. This business offers various players which have been neutered (made "region free"), but except for the Panasonic A300 at A\$1599 those on offer are NTSC only. The next day I found openly advertised in "The Weekly Trading Post" 3 places offering multi-region Panasonic (DVD A300MU) players ranging from A\$1220 to A\$1350. I knew from a report several months ago on CNBC (and in CTD) that a Hong Kong source had originally offered these players "neutered" but this source had disappeared from Internet shortly thereafter. There are no Australian PAL (Region 4) discs yet available, although "Evita" has been scheduled for release for several weeks. I bought the A300 and 8 NTSC discs, 6 of which work fine.

Sleepless in Seattle, Singin' In The Rain, Twister, Viva Las Vegas, Elvis - That's The Way It Is and Blazing Saddles all play without problems. Goldeneye played at first and then a software problem developed. When inserted, the screen says something to the effect that it does not play the movie in my chosen language and it will play in English unless I select Spanish or French. And here I thought I did speak English! Apparently the disc is language encoded for a market other than North America and it thinks the player does not have the appropriate regional coding the disc should match.

When I tried to play Wizard of Oz, up came the following message in Spanish:

"Este disco no tiene el formato para
exhibirse en esta maquina. Por favor, devuelva
el disco al lugar donde lo compro."

Roughly translated, you are not where you are supposed to be for the regional coding of this disc to work for you. Move yourself to someplace else. The real message here is that a neutered region player may not be neutered to all regional signatures appearing on all discs; the digital world is quite wondrous. I thought I might beat this thing by going to "Set-up" and then "audio" and selecting English along with the Menu Language to English. Alas, Wizard of Oz still did not play and the same Spanish message appears on the screen (this machine is smarter - or I am dumber - that I thought. How do you suppose it "knows" it is in Australia when it is supposed to be in Nebraska?) Unfortunately after this failure to beat the technology I then discovered that Goldeneye would no longer play (the rest played all right). Now the screen told me, "This disc is not formatted to play on this machine. Please return this disc to the place of purchase."

One day later I tried playing Wizard and Goldeneye again and while Wizard was still spitting at me in Spanish warnings, Goldeneye was now playing once again. I know not why. After the failure with Wizard and Goldeneye I had simply turned off the unit's power on its internal switch and left it alone overnight. On checking the menu the next day, after Goldeneye again played, I found it had reverted to the default (original setting). I swear - I never touched a thing!

MORE - Early DVD Reports

The player had been left plugged into power overnight and had been turned off with the unit's own power on/off switch. Why did it correct itself?

The next day I telephoned the source for the grey market player and asked about the strange play habits for the film Goldeneye, as well as my total lack of play capability for Wizard of Oz. I was told to go into the menu and set it to English (something I had already done several times). That failing, he suggested I press 'stop' several times in rapid succession just as the disc is starting to load. This was also fruitless. The player will return to default settings (factory settings) if the player is turned off with the front panel switch. That allows you to undo any menu entries you may have made in trying to get difficult discs to play (you can then start all over again with a fresh slate).

A friend purchased the same player model and I tried my Wizard of Oz disc on his machine; same result (the screen says "This disc is not formatted to play on this machine"). I accept this is new technology, that I am in a world "region" where the players are not yet authorised for sale and that I am buying both the player and the discs in the grey market. In other words - I, like others engaging in this must keep in mind "Caveat Emptor" (buyer beware). The player is designed for Region 1, and the discs are also Region 1. There is no logical software reason I can determine why two of the eight discs are troublesome. This player, by the way, outputs NTSC discs (Region 1) as NTSC video while it will output (when available) Region 4 PAL discs in PAL.

Performance. I have a sizeable LaserDisc (LD) collection and have been an ardent fan of that technology and format for many years. I was totally blown away by the vast improvement in video quality with DVD. I expected something better; I was not prepared for the awesome high resolution quality and very significant theatre style sound system (a major upgrade in my sound system is next to get the full theatre flavour of this capability). I have found a firm in New York City that sells newly released (Region 1, of course) discs at 20% off of retail. They ship me six discs airmail for total postage cost of US\$10.45 so you end up paying under A\$30 per disc shipping included. The smaller package is much preferred to LaserDiscs of course. It will be interesting to see, as DVD is released in Europe (in PAL format), whether the titles available are released at the same time or behind those being released in Region 1. The latest on Region 4 releases says "early 1998" although RCA is launching a player for A\$1299 and Samsung has one for A\$1399. These PAL only players are quite worthless as long as there are no (or very few) PAL format (non-Region 1) discs available. Roadshow is said to be ready to release a few titles before Christmas - we will see.

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Other comments CTD has found concerning early adapters of the DVD system here in the Pacific:

"I made a mistake. I bought the insidious DVD format player and discs and now all of my LaserDiscs look poor. After you have DVD, the best of the best LaserDisc pressing look noisy with washed out pastel colours when compared title for title with DVD. When I now play a LaserDisc, it is as if a gauze film had been placed over the screen. DVD ruins your viewing experience for LD; I fear all of those LaserDiscs I so cherished for many years will now gather dust on the shelves until one day I will wake up and say to myself, I am crazy to keep these things around any longer! I almost feel sorry for them. Do yourself a favour - if you have LaserDiscs already, do not ... do not even look at a DVD player system. It will ruin your LDs for ever!"

....

"I discovered DVD 3 months ago. WOW!!! I hesitated one week, then found a firm in France that offered a player at more than twice the suggested retail price. I bought it anyhow. Today, I sold my LD player and all of my LD collection (of around 100 NTSC titles). I have already purchased more than 30 DVD titles and will continue to do so as rapidly as they come out. (What a nightmare it is to be such a silly technology addict.)

...

"I won't be selling my LaserDisc player as I have a collection of good discs. I have bought fewer and fewer each month over the past two years, after becoming a subscriber to the (Australian) Galaxy television service. Now that I own a DVD player and have started a disc collection, I can truly say that the ultimate has finally arrived. (And it certainly is not Galaxy!)

SOUTH PACIFIC REGION SATELLITE & CABLE SHOW

"More than a change in venue"

SPACE Pacific Ltd, the cable and satellite trade association for Australia, New Zealand the Pacific Ocean region, has changed its third annual trade show from January 27-31 in Auckland to - are you ready for this - February 17 - 22 at Doubtless Bay (Mangonui and environs, in Northland). SPACE's SPRSCS events in the past years have produced first-ever in the South Pacific exposure to AsiaSat 2, consumer level MPEG digital IRD equipment, and Internet via satellite. The "show" makes a special effort to find the best technical presenters in the world, bring them to New Zealand, and focus on leading edge technology months and even years ahead of when it becomes common technology. The 1998 show is being rebilled as a "SPACE Retreat" and attendance will be limited by the circumstances of the locale and the very unusual programme planned.

At Doubtless Bay, Far North Cable TV Ltd has built one of the most innovative cable television systems in the Pacific. The system serves five rural communities with just over 900 homes "passed" by 43 channel (today - 52 by end of January) service. The take up rate of the service is, by New Zealand standards, quite exceptional.

By holding SPRSCS '98 at Doubtless Bay, attendees will be given two intensive days of exposure and training to the mechanical and business aspects of building modern day cable television systems. The programme involves SPACE Pacific Digital Satellite TV training courses (February 17-18 and in a different format February 21-22) taught by Thailand based world class lecturer and author Mark Long. These SPACE "Certification" courses have involved more than 100 attendees since they were announced in 1996, are normally offered as mail correspondence courses but have also become a mainstay of the annual SPRSCS events. Over the two days February 19 and 20, attendees will put on sun block, hats, walking shoes and be shown and taught how a modern cable television system is designed, constructed, and operated. Attendees will begin at the extensive (9 dish) satellite receiving headend and go through the cable system stage by stage with full lectures and actual operating system demonstrations at each stop. The cable headend facility is one of the more creative in the world, certainly very unique for the Pacific. On a shoe string budget, the system brings in for cable distribution such diverse services as "USA Direct" (two, direct from America network programming satellite channels), tape delays programming from out of the New Zealand time zone for replay in more comfortable "prime time," and provides local viewers with their own community channels for local self-expression.

The system has been built using modern 500 MHz bandwidth technology, is completely underground, offers four levels (tiers) of service and will add a fifth and sixth tier during the first half of 1998 covering a range from NZ\$10 per month to more than NZ\$75 per month. How well this sells, how the system is marketed in the five tiny communities, and the response of the communities to this innovative service is the theme that underlies the SPRSCS '98 Retreat event.

Attendees will be lodged at area motels (all served by cable, of course), participate in evening live television programmes which will be telecast to the community through the cable system, and enjoy the hospitality of the "Far North" and the rather extraordinary beaches and relaxed living style which characterises this virtually unspoilt corner of New Zealand.

A brochure describing SPRSCS '98 Retreat is available by contacting SPACE Pacific Ltd at PO Box 30, Mangonui, far North, New Zealand (telephone 64-9-406-0651 or fax 64-9-406-1083). The 1996 and 1997 SPACE events attracted more than 200 attendees from four continents and more than 20 countries; 1998 will be smaller, by design, but no less diverse and certainly no less innovative than its predecessors.

**SPRSCS '98 - A RETREAT INTO THE FUTURE OF CABLE
TELECOMMUNICATIONS IN NEW ZEALAND AND THE SOUTH PACIFIC**

Latest Nokia receiver versions of note. Dutch Firm Baker Electronics B.V. (PO Box 114,8320 AC URK, The Netherlands; email sales@bakkerelectronics.com) has introduced software which claims the following: For Asian use, and receivers with present software of (version) 2.2 or higher - ends use of red menu, eliminates need to know in advance PID (codes), allows mixing of C and Ku band stored channels (present software cannot do this). Software also has automatic search function that allows full scanning of an entire satellite (one polarisation at a time) to locate and store into memory all MPEG services located (including those that are in some form of conditional access). Price of new software not announced; initial tests reported on various European web sites have been mixed in praise or condemnation.

Latest Hyundai software update. Software version 2.25 is now being supplied by Skandia Electronics Pty Ltd (tel 61-3-9819-2466) and Bay Satellite TV Ltd (tel 64-6-843-5296). This software reportedly solves lip sync, last channel viewed (at power shutoff), NTSC and PowerVu access problems and adds amongst other new features a carrier to noise readout page in the installer menu. There is still confusion about the true status of the "improved" Hyundai software, however: A unit sent to sister publication SatFACTS Monthly failed to perform as advertised and Australian distributor Pacific Satellite (tel 61-7-3344-3883) in a flier dated November 1997 claims, *"The new upgraded version of Hyundai receiver is available from the middle of November. This is the official final version for Hyundai HSS-100C digital receiver. The official Hyundai upgrade service has Hyundai wording on top of them where the others have nothing on it."* Upgrade? Pacific is charging A\$80 to upgrade with the "official" new chip sets (two chips marked "Odd 2.25" and "Even 2.25" which insert into sockets previously occupied by older chips). Another Australian source is quoting A\$10 per receiver in lots of ten to upgrade to "new software." SatFACTS for November will report a sizeable number of self-help software programmes now appearing for Hyundai all of which will further confuse an already unsettled marketplace. The new chips appear to support a claim of "improved sensitivity" for the receiver by reducing the sampling rate (how often the receiver looks at the content change). There are artefacts in the newest chips which appear primarily on weaker signals. Tests indicate a weak signal that barely locks may have distorted or lip-synch audio problems; the cure is to push the mute button twice to clear up audio distortion, the pause button twice to clear up lip-synch delays.

Nokia-like copies manufactured in Taiwan have been shown at recent electronics show there and over the next 60 to 90 days a number of Taiwanese copies of Nokia brand MPEG IRDs are likely to appear in Asian and Pacific markets. Pricing will be lower by as much as 50%, some of the software shown is very elementary but at least one receiver had resolved a persistent Nokia reception glitch; garbled audio on Sky News London feeds found on AsiaSat 2.

Nokia model 9200 S (free to air programming, no conditional access module) receivers are now being distributed in Europe. One source, Weiser Electronics (Germany at fax ++49-911-440008) claims their version is equipped with a teletext/videotex "module" as well as standard MPEG-2 digital video processing. Nokia had been rumoured to have such a combo receiver in the works several months ago.

Round Up of New Analogue & Digital Players since SatFACTS October 15

Optus Vision (12.626 Hz, B3) has been running up to six programme channels free to air (Msym 29.473, FEC 3/4); at presstime some do not have audio present. Aurora's DTH and other use platform (B3, Hz on 12.563) has been running intermittently FTA in PowerVu with ABC, SBS and test cards. On I180, an audio only apparently SCPC service on 4186/964 LHC (opposite to the majority of other signals on this satellite) identifies with net name of "Data" and lists (1) New sports/Voice/Stereo, (2) Pacific/UI Voice/Stereo 2, (3) Stereo Service 2 at 5.632 and 3/4 (normally for a single channel video service). Another report says at 4175/975 LHC, a service identifying as "Americas" lists (1) New Sports/Voice/Stere 1/128kbps, (2) Batic/UI Voice/Ster2/128 kbps, (3) Stereo service 1, and (4) Stereo service 2 at Msym 3.680 and 2/3. There is much similarity between these two service listings and they may be the same but with two different (in time) transmission frequencies. Nobody has recovered audio from any of these "programme" channels to date. One report says SPACE TV Systems Ku band package (12.612Vt) is actually running North American Exxxtasy and True Blue in ViaAccess conditional access; we cannot verify. Palapa C2, 3800/1350Hz, "Baztab" in analogue PAL. Intelsat 180, 4130/1020 LHC Globecast occasional feeds analogue FTA. Two new AsiaSat 2 Chinese SCPC: 3820/1330 AHTV and 3834/1316 Hei Long Jiang TV - both 4.418 and 3/4

DSS (Direct satellite service) third generation chips, expected before end of 1998, will significantly reduce costs associated with conditional access MPEG-2 DTH (satellite) receivers. New chips merge satellite signal processing, conditional access decryption and audio processing into single IC like device. Goal is to reduce total cost of IRD to "under US\$100" and Sony working with Texas Instruments, Thomson working with SGS-Thomson Microelectronics believe they are close to a new IRD pricing plateau that will bring the home satellite receivers down to low end VCR manufacturing cost levels.

ApStar 2R successfully left the ground on Long March launcher 16 October (17.13UTC). Testing should begin as you read these words from 77E location; 16 Ku and 28 C-band transponders are on board (coverage map, which includes C-band 34-36 dBw coverage over all of Australia, appeared on p. 31 of SatFACTS for October 15).

AsiaSat 3 is now scheduled for launch between December 10 and 15 on Russian Proton vehicle. Satellite will replace AsiaSat 1 (105.5E) but is unlikely to assume full take-over responsibilities before the end latter half of January. As3 could test at 122E (where AsiaSat 1 will go after being replaced, and, where AsiaSat 4 will go in 1999) and observers will do well to watch that space.

JcSat 5 is scheduled for launch in window centred on December 2 via Ariane launch vehicle. Satellite is Ku only, to 150E.

Joint Russian/western firm Media Most has announced launch of 8 transponder high power (Hughes design) Ku band (BONUM 1) satellite to 36E in November 1998. In possible conflict, European (Eutelsat) Seasat is scheduled to same location with 18 transponders on board in January 1999. However, as long as the Russian and European satellites are utilising different Ku band frequencies and/or polarisations, both can operate at the same physical location without interference. 36E is too far west to be useful in even western Australia but plan is instructive of current Russian planning since Russian presently controls more than a dozen orbital locations that would serve South Pacific (and Asia) if activated.

ChinaSat 6 is now functional at 125E; test signals reported in Asia on 4140/101 Hz, audio on 6.6. Satellite launch was kept under wraps but bird is believed to have been in orbit and capable of transmitting for several months. No reports yet from south of the equator and the actual projected footprint coverage of this C-band only satellite have never been released.

Without Comment

READERS' VIEWS

Letters to the Business Herald Editor

Bancorp defends figures on valuation for Sky TV

Your September 3 article questioned our valuation of Sky Network Television and in so doing confused the corporate value of Sky, (ie an ungeared value), with a shareholder/equity value, (a geared value). There is, in fact, a difference of \$169.1 million, being the amount of interest-bearing debt in Sky.

Our valuation of Sky on a discounted cash flow evaluation gave an ungeared value of \$998.1 million, or \$3.26 per Sky share, and a shareholder/equity value of \$829.0 million, or \$2.71 a share.

Your September 9 article made a point that Merrill Lynch was distancing itself from Bancorp's valuation of \$3312 per subscriber and implies that Bancorp relied on Merrill Lynch information to arrive at its value for Sky.

Let me confirm categorically that Bancorp did not rely on Merrill Lynch or any other party's valuation to derive a value for Sky. The Bancorp report sets out very clearly, in the summary and the main report, that we derived our own valuation using a discounted cash flow approach. We then expressed our corporate/ungeared value of Sky of \$998.1 million as being equiv-

alent to \$3312 per subscriber. To provide comparisons with Bancorp's discounted cash flow valuation, we provided data on other companies on a subscriber value basis and equivalent earnings before interest, tax and depreciation multiples.

The equivalent per subscriber values were derived from Merrill Lynch's publicly-available research and were used as external benchmarks. To anyone reading our valuation report and taking the information in context, this should have been readily apparent.

As is normal practice, we attribute the source of research when it is not Bancorp's. The December 23, 1996 Merrill Lynch research we used had their Sky value at \$3019 per subscriber, a difference of 8.8 per cent on Bancorp's value, which is within a normal valuation range. Bancorp is also aware of other valuations undertaken by leading merchant banks/brokers which are within 5 per cent of Bancorp's valuation of Sky.

P.G. Norling.
Managing director,
Bancorp.

Larger dishes headed for New Zealand. Five Scientific Atlanta (uplink quality) 6 metre dishes; 4.5 metre SA motorised; 9.2m (2 degree rated) motorised bi-axial with 40 foot container stuffed full of 3.3kilowatt output 24 transponder C-band uplink electronics. Contact Ron Theaker at Taupo CableVision Inc. Limited (tel 64-7-378-4800; fax 64-7-377-0025; email cabletv@reap.org.nz).

Web Site advertising by New Zealand satellite hardware distributor Telsat Communications Ltd has attracted negative attention from satellite equipment dealers who are not pleased with "wholesale pricing" being freely available to anyone with Internet access (www.telsat.com). Listings include NZ\$FOB Palmerston North and US\$ FOB factory pricing with sizeable differential favouring the factory FOB selection.

State of New York could become first regional agency to purchase an entire satellite. State presently leases satellite transponder space for myriad of state business applications, has reached point in satellite use that it is now considered more economical to purchase their own satellite rather than continuing to lease space. Excess space, if any, would be subleased to adjoining states at rates they describe as "lower than commercial tariffs."

Piracy of recorded music by Internet web site operators is new target of International Federal of the Phonographic Industry (IFPI). Group claims numerous world scattered web sites are offering digital quality copies of music for which they do not have replication or sale rights; i.e., no copyright or user fees are being paid. Elsewhere, IFPI estimates direct sale of piracy CD copies amounted to 350 million units valued at more than US\$1 billion during 1996. This would indicate 14% of all CDs sold world-wide are pirate copies (no copyright or artist fees paid). IFPD rates top piracy markets as Russia with 70% of all music sold being pirate copies (US\$350m), Brazil (US\$200m), China (US\$165m), Italy (US\$105m) and India (US\$100m). The only Asian country other than China to make top-10 list was Malaysia with US\$18m per year in pirate copy sales.

In home Videophone service is being promoted by British Colombia Tel with consumer offer of (C)\$22 per month for 24 months covering cost of telephone attachment that makes video telephoning possible. Customer is actually participating in time payment plan (C\$528 total unit cost), will own Videophone unit at end of 2 year term. Extra incentive - 3 hours of free long distance calls thrown in. System is built around so-called 8x8 C-phone devices which creates 10 to 12 video frames per second with audio time delay of approximately 0.4 seconds behind video. Full motion video is of course out, and resolution is acceptable for family and some levels of business exchanges. Market analysts believe item will become mass market only when pricing drops to US\$200 and device becomes impulse rather than serious purchase.

What is most progressive technology for video compression? US satellite delivered HITS (headend in the sky) service has jumped from 7 TV programme channels per (satellite) transponder to 14 per transponder using new NextLevel system. There had been concerns that as each transponder is further divided into 'segments' (programme streams) the resulting video quality would degrade below levels acceptable to consumers. So far - no major problems.

Customer satisfaction for DTH TV in USA versus cable. Sizeable study (10,500 respondents) throughout USA rated level of customer satisfaction with their chosen pay TV delivery service. Trio of direct to home satellite providers range between 137 and 126 while highest rated cable TV firm only managed a 109 rating. Cable consumers have long held that service can be slow, and not satisfactory when finally given.

Sony has introduced new (SLV-RX9) digital VHS (D-VHS) home VCR deck that has timer activation system built-in for recording from satellite IRD. This unit can be time shifted through a telephone modem and uses voice commands to reconfigure itself even when user is not at home. Price - US\$700.

Rupert Murdoch's carefully crafted entry into US DBS market through deal to realise 33% in Primestar DBS service may be in serious jeopardy. Virtually entire telecommunications world in USA is opposing transfer of valuable 110W DBS bird transponders into what would ultimate become an important asset for Primestar. US FCC must rule on complicated transfer procedure and increasingly it appears it may be denied. If this happens, Murdoch's grand alliance with Primestar's owners TCI and other cable firms will evaporate leaving Murdoch out of the DBS business in states. This one is anything but "done."

Not So Rich - After all

Rupert Murdoch, according to Forbes Magazine, is not the 10th richest person in the world (SatFACTS August 1997; p. 12). In fact, he does not make the top 10 as compiled by Forbes. Nor the second ten. Rupert M comes in at 24 with a Forbes calculated net worth of US\$3.9 billion, well behind William (Bill) Gates at US\$39.8 billion.

Digital TV & Radio

HDTV show and tell held in Australia October 1st was provided by backers of American Advanced TV Systems Committee (ACTS). Using transmitter installed for purpose at Willoughby by TCN (9), receivers were set up at Observatory Hotel in Sydney. Harris Corp provided transmitter, Zenith the transmission (multiplex) system, Mitsubishi the receivers. Federation of Australian Commercial TV Stations (FACTS) was host for the demonstration. US hopes Australia will adopt US, not European approach to HDTV and US is engaged actively in trying to sell their system to as many additional countries as possible.

Consumer Electronics

DVD shipping ahead of street release date, directly to consumers, is one feature of new DIVX (Digital Video Express) announced by major US retail chain Circuit City. Firm has backing of major studios Disney, Dreamworks, Paramount and Universal to create system to distribute DVD discs with one or limited play times imbedded into the software. Here's how it will work. Consumer will gain access to DIVX disc for a flat one-time fee (range to US\$7). In the on-disc software, a data stream that determines whether the disc is being played the first time, a second time and so on. Consumers would be given opportunity to buy first release movies early, have them for limited play before they would otherwise be available, but be limited to a specified number of plays (and replays) by the software on the disc and in the player. Matsushita will produce special DIVX players for sale in Japan, expects players to be US\$100-\$200 higher at retail than "standard" DVD players.

DVD (disc) sales through end of September: 523,000 including 34,000 sold last week in month. Total of DVD players shipped by factories (but not necessarily sold through to consumers) at end of September: 213,000.

Digital still cameras (DSC) devices are continuing to plummet in price but at cost of corporate profits. Kodak released statement saying their line of DSC units cost the company US\$150 million in losses during most recent financial quarter, \$309 million loss during first 9 months of 1997. A US study says there will be between 1.8 and 2 million units sold in world market this year with up to 600,000 of those in USA. There are 35 manufacturers now in the field, a fact that is of some concern to the larger firms that have been attempting to establish marketing programmes and market share. Consumer confusion is high because of variety of non-compatible software systems and inability to exchange data between products. As example, FlashPix protocol did establish a common PC file format for digital stills but Portable PC '98 backed by Microsoft, Intel and some camera manufacturers places the image processing task back into the MMX microprocessor of a PC. This works better for the PC makers because it makes the cameras reliant upon consumer PCs have the correct software within the PC, but greatly reduces the range of user options available by taking the processing of the stills out of the camera proper. Quality of DSC images is improving monthly, largely because of software innovations. Agfa ePhoto 1280, for example, produces very high 1280 x 960 pixel resolution by eliminating scan lines and other artefacts with proprietary Photo Genie software. Prints to 11" by 14" have 35mm resolution; camera lists for US\$899.

Super Audio CD format - the next generation for players and discs when introduced, is provoking significant intra-industry war of words. One camp favours a system that will not make older (today's existing) audio CDs obsolete while the other - you guessed it - would create a next level audio CD system that requires everyone to replace existing discs. The arguments in favour of making a next generation upgrade are many: The usual "better quality" is on the list, along with copy protection that allows the copyright owner's "signature" to be imbedded inside of every disc (thus making tracking of pirate copies far easier). Sony and Philips are behind proposed change, are offering technology that would prevent consumers from copying discs at home as well.

Sony has further price cut larger screen TVs in US market; 7% on 35", 18% on 41" and 6% on 53". Super screen 61" is unchanged. Projection TV sets in USA have dropped between 10 and 15% during past 12 months (on a model by model basis). GE recently announced a 46"/1168mm screen size receiver at US\$999 list in effort to buoy up sales pattern for larger screen TVs. Industry in US had projected 8 to 12% growth during 1997, but year to date has been just over 4% increase. Sony has 14% share of this sub-market which is led by Mitsubishi at 25%.

WebTV has begun expansion into Asia with start up of service in Japan. Sony is offering WebTV Classic set-top boxes there at US\$370 (model INTWJ200); charges are equivalent of US\$20 per month for 15 hours of Internet use and US\$2.50 per hour for additional time.

"Candle In The Wind" Blown Out by Pirates

Elton John funeral tribute to Princess Diana went to top of sales charts in 14 of 40 countries monitored in week following release. However, pirate copies of tape and CDs immediately popped up in Asia, Latin America and Europe including video CD versions in Hong Kong.

DirecPC, the satellite delivered partner for North American DirecTV DTH service, has postponed official North American launch until "after January 1." DirecTV expects to pass the 3 million subscriber point by November 15th and to end the year with more than 3.1 million TV service subscribers. DirecPC is in partnership with Microsoft to configure the satellite delivered Internet into as attractive a one-way (down load) service as possible. One feature of new service will be "Best of Web" 2000 web site main package which users will pay between US\$10 and \$20 per month to access for unlimited time..

Thomson (US) is attempting to "buy out" 40% (1,300) of its American work force in a dramatic bid to reduce overhead. Most of those who are being asked to take early retirement are in sales and marketing areas. Thomson previously closed TV manufacturing plants in Indiana and Mexico.

Thomson has recalled first 1,000 Network Computers (their version of WebTV browser boxes) because of safety concern. Thomson reportedly discovered that if user was (1) logged onto NetChannel service through internal modem, (2) simultaneously using telephone handset, and, (3) had hand also on Network Computer when lightning strike occurred in region, there was a (small) chance of a minor electrical shock (although not electrocution). Units recalled were (at consumer option) replaced with modified versions or field updated to eliminate the risk.

Panasonic has shown portable DVD player with built-in LCD display screen at Japan Electronics Show. Unit is designed as a use-when-operating clamshell, slightly larger than the DVD disc, with a 5.8" widescreen active matrix screen and stereo speakers on each side. Unit operates on AC or batteries. No pricing nor product availability announcements at this time.

Sharp plans December release in Pacific of DVD player that has features not previously available in North American models. Unit has component video output as well as composite with Y-C/RGB compatibility. Sharp says unit has new video processing features which will require further explanation (not forthcoming yet). *Digital Super Picture* may be similar to line doubling. *Digital Gamma Correction* is some new level of image shaping that refines the MPEG-2 compressed video image. This Sharp unit, which is being first marketed in Asia and the Pacific, may well be the leading edge of the second generation DVD boxes which have been forecast. Unit will not be released in North America until start of second quarter 1998; it is not often we get the new models first!

Disney's Buena Vista is releasing 8 DVD titles for the 1998 Christmas season (December 2 - *George of the Jungle* plus *Scream*, *Ransom*, *The Rock*, *Tombstone*, *Phenomenon*, *Tim Burton's Nightmare Before Christmas*, *Homeward Bound: The Incredible Journey*). Universal Studios Home Video is releasing November 18 (*Babe*, *The Shadow*, *The Paper*, *Beethoven*) and December 9 (*The River Wild*, *Sudden Death*, *Backdraft*, *Waterworld*). Columbia TriStar Home Video is releasing December 9 *My Best Friend's Wedding*, *The Fifth Element: Das Boot*, and *The Director's Cut: Flatliners*. Fox Studios is not yet releasing DVD in USA but New Zealand and Australia consumers will have an unusual opportunity to purchase *Die Hard With A Vengeance* through Australian Roadshow Entertainment as well as Cinergi's *Evita* and 8 other titles "before Christmas." Roadshow, by the way, is using the Macrovision PAL DVD copy protection technology so people won't be making VHS dubs from Roadshow releases without a "black box" in line to defeat Macrovision.

First "truly interactive DVD movie," *Tender Loving Care*, is scheduled for release before end of year by Aftermath Media. Movie allows viewers to select twists in plot line as story unfolds and determine middle and ending by their choices.

Compaq's under US\$1,000 Presario 2210 home PC has been hit at factory level by computer virus affecting PCs intended for sale in Japan. Compaq has traced the virus to an Internet loaded software programme placed on the PCs at Taiwan plant.

3.5" (HiFD) floppy diskette with capacity to store 200 Mbyte of data is scheduled to be shown at COMDEX show in Las Vegas (November 17-21). Jointly developed by Alps Electric, Fuji, Teac and Sony, enlarged new capacity will allow diskette storage of sizeable video files as well as software programmes now requiring multiple disks. Co-developer Sony has model MDS-PC1 MD recorder which it believes will be convenient tool to store up to 2,000 photographs with narration on one of the new HiFD diskettes.

Pioneer TV antenna manufacturer Channel Master has been sold off by parent Avnet to Questor Partners of Southfield, Michigan in deal that reportedly involved approximately US\$100m. Channel Master was 1947 entrant in home TV antenna field, early designer and marketer of home satellite (dish) antennas (1981) and maintained presence in New Zealand through Auckland firm Signal Master.

Cable/Fibre/MMDS/Pay TV

Five channels of movies delivered by Ku-band satellite to Australian and New Zealand homes and commercial establishments, conditional access with subscription fees in the region of A\$25 per month. Fantasy? One Australian

firm does not think so and a business plan is being circulated. If this one flies - March or April start. This is a "third player" in the pay TV game, Sky being the first one of note for New Zealand and an unnamed firm being the second. That Sky will be the only digital pay TV supplier in New Zealand, or even the first, grows less likely with each passing month.

Status of Sky Network's digital TV bouquet expansion: Nobody is talking on or off the record. At least not in New Zealand. However, hardware suppliers outside of New Zealand confide the decision on which digital format will be chosen is now put off until at least December. "The new owners of Sky" goes the report "are anxious to have their views considered by Sky decision makers before a final decision as to transmission format and companion receivers is made." Interpretation? Murdoch at work. The new Sky Board of Directors, by the way, includes Rupert's son.

How much is Sky Network (NZ) worth? The Bancorp evaluation released late in August decided Sky stock should have a market value near NZ\$3.26 per share which works out to a corporate value of NZ\$998.1 million. The New Zealand Herald (September 3; see p.14 here) and others have taken editorial positions questioning the values placed by Bancorp. It comes down to this. As Sky floats to the public, a value must be established. The paid in value for Sky most recently established, when Murdoch's INL took over 48%, was significantly less than \$3.26 per share. The effort here is to get the public to pay more for Sky shares than INL paid and in the process some (if not most) of the individuals and firms presently holding the non-Murdoch 52% cash out at the highest number possible. Sky's flotation date was set before the minor stock market crash of late October, may now be delayed while the market regains its composure.

Far North Cable TV's Doubtless Bay cable system will complete construction in Taipa, the fifth community served, by the end of November. The system will have 32 kilometres of buried cable plant in operation, passing approximately 900 potential subscriber homes. The system was carrying 43 TV programme channels on November 1, projects 52 channels of cable service by the end of January and 60 by the middle of 1998. The present channel offering is believed to be two times as many channels as offered by any other New Zealand cable system, a third more than any Australian system. Two recent channels to be added - "USA-Direct," a pair of channels featuring direct from North America programming (via satellite).

NBC Network, Asian headquartered in Hong Kong, has redesigned its Taiwan cable distribution network appointing Easter Multimedia as the exclusive distributor for CNBC and NBC Asia in the country. Eastern is the largest cable operator in Taiwan and on its systems CNBC will be on cable channel 29 while NBC will be on channel 55 henceforth. This allows national promotional advertising for the two NBC channels with uniform channel designations in each marketplace. A similar proposal has been discussed for the various imported TV channels in New Zealand and Australia

Australia's new NVE (non-violent erotica) classification allows cable distribution of what might elsewhere be automatically rated as triple X material. The distinction revolves around the separation of sex and mayhem such that sex is separately rated from brutality and over the top violence. NVE classified programming is now being offered on a pay per view basis by Mildura, Victoria cable system operator Neighbourhood Cable Pty Ltd at between A\$4 and \$5 per movie showing.

Austar, a regional supplier of pay TV in rural areas of Australia, has been trialling a microwave delivered Internet delivery system not unlike that developed in New Zealand by IHUG (see feature, page 6 here). The service claims 76 kbps delivery speed to home subscribers equipped with a normal MMDS microwave dish system and a special PC expansion card produced by General Instrument under the trade name of Surfboard. The service was first introduced in Ballarat (Victoria) and will if successful be expanded into other regional service areas served by Austar. PCs connected require a Windows 95 operating system.

Galaxy released 55 full time employees and 30 installers at the end of October as new system installs all but ground to a standstill in Australia. No new promotion is being done for the satellite or MMDS delivered service, those who call on their own and request an install are being heavily encouraged to make advance payment for a full year of service (plus equipment rental - more than A\$600) and then wait typically two weeks for a scheduled installation to occur.

Cable modem prices (for delivery of Internet data to homes via cable television systems) are expected to fall to US\$150 by 2002; presently cable firms are paying in range of US\$450 per modem in very large quantities. At same time, telephone company xDSL technology modems are expected to drop from current US\$2,400 to US\$200 each. US study forecasts 7 million cable modems installed there by 2002 versus under 2 million telecom xDSL units

61.4% of all US cable TV subscribers are on systems owned by four largest cable MSO (multiple system operator) firms. Although US government has attempted to restrict cable rate increases to justifiable cost of living

increases, Consumer Union group claims rates have risen 8.2% per year since 1996 and 6.3% per year for last 7 years. Cable operators are allowed to increase rates if, after complicated bureaucratic proceeding, they can convince government watchdog agency that new costs are result of increased investment in plant and facility. During 1996, cable TV in US spent US\$5.1 billion on system upgrades and expansion while at same time spending US\$5.6 billion on programme acquisition costs. US FCC set 1.0218 as inflation factor from which cable systems may automatically increase cable TV rates without special showings during period ending August 31, 1998.

Slowdown in US cable TV construction and rebuild market is hurting equipment suppliers. Major suppliers such as SA report revenues and earnings down from previous quarters and General Instrument under new name of Next Level Systems (NLS) has done major shake-up of top personnel in effort to find profitable bottom line again. Industry blames major slow down in new equipment orders from cable MSO TCI for drop in sales and profits; NLS depends more on NLS than any other cable hardware supplier. TCI has been consolidating its own operations in an effort to improve profitability. NLS 4th quarter earnings to be down 1/3rd from 1996.

Terrestrial Broadcasting

Prime TV, backed by 7 Network Australia, and owner of the 32 UHF channels originally in the hands of UCB, has a soft on-air target date of mid-1998. No detailed announcements have been made, but it appears the channel will position itself as a competitive to TV2-3-4 free to air broadcast service playing the usual assortment of sport, movies, syndicated programming and news. A news department is planned (unlike TV4, and, TV2 which piggy backs for brief news updates on the facility of TV1). How much of the service will originate in Australia, and be fed to New Zealand via satellite for over the air play is still unknown. 7 Network has well established programming source arrangements which will undoubtedly assist Prime TV in aligning new material for broadcast. One possibility under consideration: Prime TV will be distributed via cable and satellite nation-wide in Australia in some format, perhaps without the New Zealand content.

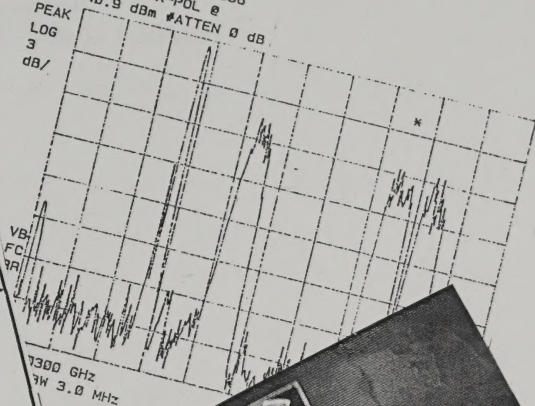
Broadcasting Standards Authority (NZ) seeks modification of Broadcasting Act of 1989 to bring pay television (including cable, over the air and satellite "pay") under rules that would restrict "adult programming" to day parts. At the present time, free to air and pay TV have different standards (the pay TV rules are more relaxed). The first part of the change involves standardisation of the on screen warnings. The second major change will limit R18 programmes to after 10PM local time (there are claims that Sky on occasions has transmitted such films as early as 8.30PM). The issue revolves around the often difficult to define "good taste and decency." Sky has argued against the change, citing that it now offers their subscribers optional R18 rating cards (which prevent any R18 programming from being viewed, such as when adults are not at home) and in a universe of 300,000 subscribers approximately 500 subscribers (.00167%) have asked for such cards. The Broadcast Standards Authority conducted a 1,000 person survey of which 300 were Sky subscribers. Out of that universe, almost precisely half (500) were in favour of (1) unifying standards between regular TV and pay TV, and, (2) forcing pay TV to limit R18 programmes to 10PM and after. The report issued October 30th did not break down where the 500 who so "voted" came from (i.e., whether Sky or non-Sky subscribers) and pay TV operators (including Sky and cable firms) consider the study exceptionally flawed by both methodology and determination. If the intent of the change is to "neutralise" the playing field such that pay (over the air, Sky through satellite or cable) and free to air terrestrial TV have the same rules - the proposed changes will accomplish that aim. A Standards Authority release states, *"Any television operator transmitting overseas programming into New Zealand is subject to the Act and our purview. Our responsibilities extend only to New Zealand broadcasters (and under the Act, a cable operator is considered a "broadcaster"). Local broadcasters sourcing programming from overseas must broadcast in compliance with the Act. However, the Act cannot be enforced on overseas-based broadcasters beaming programmes directly into New Zealand that are received by individual viewers, but not re-broadcast."* In a related action, the Broadcasting Standards Authority has reminded all broadcasters (again, inclusive of cable) with an annual turnover in excess of \$500,000 that a levy must be paid to support the activities of the authority. The amount of the levy is calculated by multiplying the annual turnover by .0051 and adding GST to the result

US network NBC has convinced its 200+ affiliates to create station operated local "NBC Neighbourhood web sites." System is being billed as coast-to-coast network of web sites. Each site will contain related-to-TV programming material as well as transactional pages that key off of local market TV station advertiser promotional campaigns allowing viewers to turn directly into consumers of products through interactive ordering via web sites. NBC is studying national network advertising through web sites much as it now sells television advertising..

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